REMARKS

Claims 1-30 remain pending.

In the Office Action, the Examiner required restriction among the following groups of claims:

I.   Claims 1-9 and 16-26.

II.   Claims 10-15.

III. Claims 27 and 28.

IV.   Claims 29 and 30.

Applicant provisionally elects Group I, claims 1-9 and 16-26, with traverse.

The Examiner is respectfully reminded of the two requirements in M.P.E.P. § 803 for a proper restriction: "(A) The inventions must be independent . . . or distinct as claimed . . . ; and (B) There must be a serious burden on the examiner if restriction is required."

No serious burden:

Addressing the second requirement, the facts and circumstances all indicate that there is no "serious burden" in examining all of claims 1-30, even if the inventions were independent or distinct as claimed. On page 2 of the Office Action, only Group I is correctly classified in class 375, subclass 240.16: "Motion vector." The remaining Groups II-IV are incorrectly classified outside of subclass 240.16, where they properly belong with the claims of Group I.

The plain claim language of Groups II-IV places them squarely in class 375, subclass 240.16: "Motion vector." For example, claim 10 (Group II) recites a "method of estimating a motion vector . . . comprising . . . determining the motion vector based on the target block and

the one of the first and second minimum blocks." Also, claim 27 (Group III) recites an "image

encoder including a motion estimator for estimating a motion vector . . . the motion estimator

comprising: . . . an estimation module that estimates the motion vector." Further, claim 29

(Group IV) recites a "method of estimating a motion vector for a target block of pixels . . .

comprising: . . . determining the motion vector based on one of the candidate blocks." All of

claims are plainly directed to motion estimation and are properly classified together in class 375,

subclass 240.16: "Motion vector."

Regarding the misclassification of Group II into subclass 240.27: "Error detection or

correction," the mere recitation of determining a motion vector "based on . . . one of the first and

second minimum blocks associated with the lesser of the first and second distortion measures"

does not equate to "the detection or correction of errors in the coding process" (the description of

subclass 240.27 from the Manual of Classification). That distortion measures are used in motion

vector estimation does not imply that errors in a coding process are detected or corrected.

Similarly, claims 27-30 (Groups III and IV) are misclassified in into subclass 240.24:

"Block coding." As explained above, the claims in Groups III and IV concern estimation of

motion vectors, and not coding data in blocks. That claims 27-30 may recite blocks is irrelevant

to subclass 240.24, because these blocks are used in estimating motion vectors, and not for

"coding" as indicated in the Manual of Classification.

As explained above, Groups I-IV are properly classified in a single class (i.e., 375)

subclass (i.e., 240.16: "Motion vector"). Because "the classification is the same and the field of

search is the same and there is no clear indication of separate future classification and field of

search" (M.P.E.P. § 808.02), restriction is not proper among Groups I-IV. The requirement

should be withdrawn for at least this reason.

<u>Groups not patentably distinct:</u>

It readily apparent that paragraphs 0011 to 0042 and Figs. 1-3 of the published

application describe a single embodiment of the invention.[1] That Applicant has chosen to claim

this one embodiment in different ways does not create independent or distinct inventions. See

M.P.E.P. § 806.03 ("Where the claims of an application define the same essential characteristics

of a single disclosed embodiment of an invention, restriction therebetween should never be

required. This is because the claims are but different definitions of the same disclosed subject

matter . . ."). Hence the claims cannot be patentably distinct, because they define the same

essential characteristics of the single disclosed embodiment. The requirement should be

withdrawn for this additional reason.

Although M.P.E.P. § 806.03 forecloses restriction as explained above, in an effort to be

fully responsive Applicant will address the allegations in portions 2 and 3 of the Office Action.

In portion 2, the Office Action alleges that Group I is a combination and that Groups II-

IV are subcombinations. This portion also alleges that the "subcombination has separate utility

such as estimating motion vectors based on collinear pixels rather than search areas of the

reference frame." To the contrary, claim 1 in Group I, which is alleged to be the combination,

also estimates motion vectors based on collinear pixels (e.g., "the first distortion function based

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[1] If the Examiner disagrees, he is respectfully requested to identify two or more distinct embodiments
within the specification.

only on a set of two or more collinear pixels from the target block and a set of two or more collinear pixels from block B_i"). Thus, the two-way test for combination-subcombination distinctness fails for Groups I-IV. The requirement should be withdrawn for this additional reason.

In portion 3, the Office Action alleges that Groups II and IV are a process, and that Group III is an apparatus for its practice. This portion also alleges that the image encoder of claim 27 (Group III) can be used to practice "another and materially different method where candidate search areas are defined by selective pixels rather than a fixed block." This assertion is spurious, because claim 27 does not recite either an "area" or a "candidate search area." See M.P.E.P. § 806.05(e) (" . . . (B) that the apparatus *as claimed* can be used to practice another and materially different process." (emphasis in original)). Thus, the supposed difference relied upon in portion 3 of the Office Action (i.e., defining a candidate search area) is not *claimed* in claim 27, and the proof required by M.P.E.P. § 806.05(e) is not present in the Office Action. The requirement should be withdrawn for this additional reason.

Because Groups I-IV have not acquired a separate status in the art, and because these groups are not distinct, all pending claims in Groups I-IV should be examined together.

Reconsideration and examination of all pending claims 1-30 is respectfully requested.

In the event that any outstanding matters remain in this application, Applicant requests that the Examiner contact Alan Pedersen-Giles, attorney for Applicant, at the number below to discuss such matters.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is

hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

including extension of time fees, to Deposit Account No. 50-0221 and please credit any excess

fees to such deposit account.

Respectfully submitted,

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